DOCUMENTING SAMPLE CONTROL

Quality Implementing Procedure ID: OSTI-LBNL-QIP-SII.0, Rev.0, Mod.0 *Effective: 05/07/04*

1. PURPOSE

This Quality Implementing Procedure (QIP) establishes the process and responsibilities for collection, use, and control of physical samples in scientific investigations conducted for the Office of Science & Technology and International (OSTI)-Lawrence Berkeley National Laboratory (LBNL) Project.

2. SCOPE

This QIP applies to all scientific staff and support participants within the OSTI–LBNL Project who collect, request, and use samples for scientific investigations conducted for OSTI-LBNL activities subject to the U.S. Department of Energy (DOE) Office of Civilian Radioactive Waste Management (OCRWM) *Quality Assurance Requirements and Description* (QARD), DOE/RW-0333P, Supplement II. This QIP has been prepared in accordance with OSTI-LBNL-QIP-5.0, *Preparing the Quality Assurance Plan and Quality/Technical Implementing Procedures.*

3. PROCEDURE

3.1 General Sample Identification and Traceability

3.1.1 All **Scientific Staff** shall ensure that sample identification and control is adequately documented to permit tracking of a sample or parts thereof, from its origination through all analytical or other processing including handling, preservation, shipment, transfer, analysis, and storage, to its present location or final use.

3.1.2 Prior to using a sample, the **Principal Investigator** (**PI**) or **Scientific Staff** shall document the sample identification number, and other planning or task information that ties it to an OSTI-LBNL activity, in a scientific notebook (or in a scientific notebook supplemental record) in accordance with OSTI-LBNL-QIP-SIII.0, *Scientific Notebooks.*

3.1.3 The **PI** or **Scientific Staff** shall label a sample, or part thereof, with physical markings, if possible, by placing a unique identifier on the sample or its container. Physical markings shall:

A. Be clear and legible,

B. Be non-detrimental to the sample content or form,

C. Not be obliterated or hidden by surface treatments or sample preparation unless other means of identification are substituted,

D. Indicate, if necessary, the proper handling, storage and shipping of the sample, the presence of special environments, or the need for special controls.

If physical markings are either impractical or insufficient, other means of identification, such as physical separation, container labels or tags, or administrative controls, shall be used.

3.1.4 If planning documents or Technical Implementing Procedures (TIPs) contain specific identification or traceability requirements for samples, the documents shall be referenced in the scientific notebook and those specified controls shall be implemented.

3.2 Field Sample Origination

3.2.1 For samples collected in the field, the **PI** or **Scientific Staff** shall document the following in a scientific notebook, or in accordance with an OSTI-LBNL-TIP, as appropriate. Documentation may consist of a copy of the Sample Collection Report, as discussed in Section 3.2.2.

A. Unique sample identification number.

B. Date sample was taken.

C. Type of sample.

D. Collection method.

E. Field location, including site type and site description, providing enough information to allow the site to be located by personnel (with equivalent experience) who are independent of the Collector.

F. Specifics on sample orientation relative to the location, as appropriate.

G. Sample size (weight, volume, etc.).

3.2.2 All field sample collection activities shall be coordinated through the Yucca Mountain Project (YMP) Sample Management Facility (SMF). **PIs** or **Scientific Staff** shall use the identification labels provided by the SMF, and submit a Sample Collection Report to the SMF in accordance with OCRWM Administrative Procedure AP-SII.3Q, *Collection, Submission, Return, and Documentation of Non-Core and Non-Cuttings Samples/Specimens to the Sample Management Facility.* Samples may be stored at the SMF or at LBNL, provided identification labels have been obtained, and the Sample Collection Report has been submitted to the SMF.

Use of the SMF identifier is not optional. It is required for project specimens and also functions to link the collector's sample ID, if any, on the Sample Collection Report. If the Sample Collection Report is not submitted to the SMF, the collected specimen(s) will not be considered valid for Project use.

PIs or **Scientific Staff** may also use their own unique identifiers providing they maintain traceability to the SMF sample identification number.

Sample derivatives (pieces) do not need SMF identification labels, but must be traceable to the original sample.

3.3 Laboratory Sample Origination

For samples produced in the laboratory, the **PI** or **Scientific Staff** shall document in a scientific notebook or a TIP, as appropriate:

A. Method of preparation (or reference to the appropriate TIP),

B. Assignment of a unique identification number to the sample (and on the sample if possible),

C. Special safety, preserving, and handling information, and

D. Other relevant information about the sample.

3.4 Obtaining or Receiving Samples

3.4.1 When requesting samples from the SMF, the **Requester** shall follow the OCRWM procedures AP-SII.1Q, *Authorization for Sample Examination at the Yucca Mountain Site Characterization Project Sample Management Facility*, AP-SII.2Q, *Requesting, Transferring and Returning Yucca Mountain Project Geologic Borehole Specimens*, and AP-SII.3Q, as appropriate.

3.4.2 When receiving samples (transferring responsibility) from another staff member or organization, the **Recipient** shall document the receipt in a scientific notebook and ensure the notebook entry includes the original unique identifier and the SMF identifier (if available), and any information provided by the Sender for the proper handling, storage and shipping of the sample, the presence of special environments or the need for special controls for the samples, as appropriate. Documentation may consist of a copy of the Transfer of Custody and Receipt form in accordance with AP-SII.3Q.

3.4.3 When samples are received in a condition unacceptable for the intended use, they may be returned to the sender with documentation of how the sample was received. The **Recipient** shall document this information in a scientific notebook. The **PI** or **Scientific Staff** shall then determine the need for further corrective actions according to Section 3.9.

3.5 Sample Storage

PIs or **Scientific Staff** shall:

A. store each sample under physical conditions that are sufficient to preserve it for its intended purpose(s), for a duration within its expected storage life, or as required by a TIP;

B. document special storage requirements in a scientific notebook, or as required by a TIP; and

C. maintain or replace identification markings, if applicable, that have been damaged or deteriorated.

3.6 Sample Handling

PIs or **Scientific Staff** shall document, as appropriate, in a scientific notebook, or in a TIP:

A. Methods for cleaning a sample,

B. Special equipment, protective environments, and packaging,

C. Safety precautions, and

D. Any other special controls.

3.7 Sample Shipping

PIs or **Scientific Staff** shall document in a scientific notebook, or in a TIP, as appropriate:

A. The unique identifier for each sample or shipping container,

B. If shipment is by commercial carrier, the invoice number (or other shipping numbers which can be used to track the sample) for the shipment, and

C. Special packaging environments or controls.

3.8 Sample Archiving

Samples that are no longer needed for study on the OSTI-LBNL Project shall be disposed of by staff as appropriate by:

A. submitting, or returning, samples to the SMF in accordance with AP-SII.2Q.

B. for samples that can not be returned to the SMF (for example, because of contamination), submitting to the SMF documentation concerning the circumstances and status of the samples;

C. documenting the final disposition of the samples in a scientific notebook, and whether they were sent to the SMF, consumed during testing or disposed of by other means.

3.9 Nonconforming Samples

Samples that do not meet specified requirements, lose traceability, or are determined by the **PI** or **Scientific Staff** to have been compromised, are considered to be nonconforming samples. Disposition shall be limited to 'use-as-is', 'limited-use', or 'discard' as addressed in OSTI-LBNL-QIP-15.0, *Nonconformances*.

PIs or **Scientific Staff** shall control the use of nonconforming samples in accordance with procedure OCRWM-LBNL-QIP-15.0, and coordinate with the Quality Assurance (QA) Manager for issuance of a Non-Conformance Report (NCR).

4. RECORDS

The records listed in Sections 4.1 and 4.2 shall be collected and submitted to the records Coordinator for submittal to the OCRWM RPC in accordance with OSTI-LBNL-QIP-17.0, *Records Management,* as individual records or included in a records package, as specified.

4.1 QA Records

Sample documentation as contained in scientific notebooks or supplementary material in accordance with OSTI-LBNL-QIP-SIII.0.

4.2 Non-QA Long-Term Records

None.

4.3 Non-QA Short-Term Records (three years or less retention)

None.

5. RESPONSIBILITIES

5.1 The **Principal Investigator (PI)** is responsible for overseeing the implementation of this procedure.

5.2 **Scientific Staff Members** involved in any part of this procedure are responsible for carrying out the documentation activities identified in this procedure and for turning over related documentation to the Records Coordinator.

5.3 The **QA Manager** is responsible to assist the PIs and Scientific Staff to prepare nonconformance reports for any samples that are nonconforming, as needed.

6. ACRONYMS AND DEFINITIONS

6.1 Acronyms.

AP	OCRWM Administrative Procedure
DOE	U.S. Department of Energy
LBNL	Lawrence Berkeley National Laboratory
NCR	Non-Conformance Report
OCRWM	Office of Civilian Radioactive Waste Management
PI	Principal Investigator
QA	Quality Assurance
QARD	Quality Assurance and Requirements Document
QIP	Quality Implementing Procedure
RPC	Records Processing Center
SMF	Sample Management Facility
TIP	Technical Implementing Procedure
YMP	Yucca Mountain Project

6.2 Definitions.

OSTI-LBNL Activity: Scoping and developmental work to support the characterization and licensing of a high-level nuclear waste repository at Yucca Mountain, Nevada.

Sample (Physical): A physical part of a whole whose properties are studied to gain information about the whole. (QARD)

Sample Management Facility (SMF): The SMF is the facility used for the documentation, storage and control of samples, specimens and remnants collected and dispersed for analysis and evaluation by users. The SMF consists of a physical facility and equipment designed to effectively process and conserve preserved collected samples.

Scientific Investigation: Any observation, identification, description, experimental study, or analysis and explanation of natural phenomena. (QARD)

7. REFERENCES

DOE/RW/0333P *Quality Assurance Requirements and Description*

AP-SII.1Q *Authorization for Sample Examination at the Yucca Mountain Site Characterization Project Sample Management Facility*,

AP-SII.2Q *Requesting, Transferring and Returning Yucca Mountain Project Geologic Borehole Specimens,*

AP-SII.3Q	*Collection, Submission, Return, and Documentation of Non-Core and Non-Cuttings Samples/Specimens to the Sample Management Facility*
OSTI-LBNL-QIP-5.0	*Preparing the Quality Assurance Plan and Quality/Technical Implementing Procedures*
OSTI-LBNL-QIP-15.0	*Nonconformances*
OSTI-LBNL-QIP-17.0	*Records Management*
OSTI-LBNL-QIP-SIII.0	*Scientific Notebooks*

8. ATTACHMENTS.

None.

9. REVISION HISTORY.

05/07/2004 Revision 0, Modification 0
Initial Issue

10. APPROVAL

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